REMARKS

Claims 1, 3, 4, 7-18, 20, 24-35, 37, and 38 are pending. Claims 11, 12, 14-17, and 28-34 have been withdrawn by the Examiner as being drawn to a nonelected species. Claims 39-48 have been added. No new matter has been introduced.

Claims 1, 3, 4, 20, 24-26, 35, 37, and 38 stand rejected under 35 U.S.C. § 102(e) as being anticipated by USPN 6,007,533 to Casscells et al. ("the '533 patent"). The applicants submit that the '533 patent is not available as 102(e) prior art. The present application incorporates by reference and claims priority to provisional application 60/059,383, filed September 19, 1997, and the applicants submit that the present application is entitled to the priority claim (see, e.g., page 2, lines 10-23). Accordingly, the present application has an effective filing date of September 19, 1997 (35 U.S.C. § 119(e)(1); see also MPEP § 706.02(a)). The '533 patent also claims priority to provisional application 60/059,383, but claims no earlier priority. Accordingly, the 102(e) reference date of the '533 patent can be no earlier than September 19, 1997 and cannot predate the effective filing date of the present application. Therefore, the '533 patent is not prior art under 102(e) to the present application.

Claims 1 and 20 stand rejected under 35 U.S.C. § 102(e) as being anticipated by USPN 5,782,795 to Bays ("Bays"). The applicants respectfully disagree and submit that Bays does not teach or suggest producing or permitting a "cauterizing action at the at least one conducting portion of the tip" (claims 1, 20). Indeed, Bays does not even teach or suggest electrosurgery but, rather, is concerned with irrigation and mechanical cutting. The Examiner identified element 36 as an electrical interface; however, Bays identifies element 36 merely as a plastic hub (col. 4, line 14).

Dependent claims 3, 4, 7, 8, 24, and 26 stand rejected under 35 U.S.C. § 103(a) as being obvious over Bays in view of USPN 5,810,809 to Rydell ("Rydell"). Dependent claims 9, 10, 13, 18, 27, and 35 stand rejected under 35 U.S.C. § 103(a) as being obvious over Bays in view of USPN 4,532,924 to Auth et al. ("Auth et al."). Dependent claims 9, 10, 13, 18, 27, and 35 stand rejected under 35 U.S.C. § 103(a) as being obvious over the '533 patent in view of Auth et al. In

light of the arguments above for the patentability of independent claims 1 and 20, the applicants submit that these rejections have been overcome.

The applicants submit that Rydell does not overcome the deficiencies of Bays. For example, Rydell does not teach or suggest a tip that has a surgical motion as well as providing a cauterizing action. More specifically, Rydell does not teach or suggest "the drive interface producing a surgical motion of the tip, and the electrical interface producing a cauterizing action at . . . the tip" (claim 1) or "the shaft . . . mechanically coupled to the drive interface to permit a surgical motion of the tip, and the shaft electrically coupled to the second interconnector to permit a cauterizing action at . . . the tip" (claim 20). Rather, Rydell teaches a rotating inner tube 24, mounted within a stationary outer tube 20 (col. 3, lines 39-43 and col. 5, lines 1-21), with cauterization occurring only at a distal portion 12 of outer tube 20 (col. 5, lines 37-44 and 55-59). Thus, cauterization occurs at surface 12 that does not have a surgical motion.

The applicants submit that Auth et al. does not overcome the deficiencies of Bays. For example, Auth et al. does not teach or suggest a tip that has a surgical motion as well as providing a cauterizing action. More specifically, Auth et al. does not teach or suggest "the drive interface producing a surgical motion of the tip, and the electrical interface producing a cauterizing action at . . . the tip" (claim 1) or "the shaft . . . mechanically coupled to the drive interface to permit a surgical motion of the tip, and the shaft electrically coupled to the second interconnector to permit a cauterizing action at . . . the tip" (claim 20). Rather, Auth et al. teaches a bullet-shaped electrosurgical device 22 (col. 5, lines 11-12) that has no surgical motion but it used solely for cauterization (FIGS. 1-2; col. 6, lines 41-48). Thus, cauterization occurs at an electrode surface that does not have a surgical motion.

New claims 39-48 are believed to be patentable over the cited prior art.

Attached is a marked-up version of the changes being made by the current amendment.

Applicant asks that all claims be allowed. Enclosed is a $264 check for excess claim fees and a $920 check for the Petition for Extension of Time fee. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the specification:

Paragraph beginning at page 6, line 26, has been amended as follows:

The electrical contact [188] 118 can include a brush. The commutator 134 can include a disk.

Paragraph beginning at page 6, line 15 has been amended as follows:

Shaft 140 is contained within cannula 114, and kept separate from the cannula by inner alignment piece 230. The cannula, inner alignment piece, and shaft are connected at their proximal ends to housing 108 via interconnector 112. Interconnector 112 serves to locate the shaft, inner alignment piece, and cannula. Interconnector 112 includes locking member 216 which is shaped so as to secure the cannula within extended housing portion 208. The locking member also has a notch 212, which is located opposite a detent 210 located on an interior surface of the extended housing portion. The locking member additionally includes outer [o-ring] O-ring seal 206, located between the locking member exterior surface and the extended housing portion interior surface. The extended housing portion includes exterior threads 214A, located so as to be opposite interior threads 214B, which are located on locking ring 218. Located at a proximal end of shaft 140 are commutator 260 and drive coupling 130. Wire 122 delivers power to commutator 260 via interconnector conductor 250, and electrical connector 252. The electrical connector is located such that it is in electrical [connector] contact with commutator 260.

The paragraph beginning at page 7, line 3 is being rewritten as the following two rewritten paragraphs. For the Examiner's information, the only change being made to the original paragraph is that it is being divided into two paragraphs (i.e., there are no changes to the wording):

In operation, interconnector 112 serves to attach inner alignment piece 230, shaft 140 and cannula 114 to thehousing. The inner alignment piece serves to locate the shaft within the

cannula, and also serves as a bearing for the shaft. Locking member 216 serves to locate the inner alignment piece within extended housing portion 208 through the engagement of notch 212 on the locking member and detent 210 on the interior of the extended housing portion. Locking ring 218 serves to secure the locking member, together with the cannula, inner alignment piece and shaft, within the extended housing portion. The locking ring accomplishes this via the cooperative action of its interior threads 214B and exterior threads 214A, which are located on the exterior surface of the extended housing portion. Drive coupling 130 serves to impart a surgical motion to shaft 140. Outer O-ring seal 206 serves to prevent transmission of body fluids that may be present at the distal end of the shaft through to the housing. Electrical power is provided via wire 122, to commutator 260. Commutator 260 is electrically coupled to distal end of shaft 140, thus producing a cauterizing effect at the distal end of the shaft.

FIG. 2B shows a cross section of another embodiment of surgical apparatus 200, which shows a generally insulating shaft including an interior conductor 240. The elements, their arrangement and function are identical to those described above in FIG. 2A with the following differences. The interior conductor is located within shaft 140. The shaft is generally insulating. The interior conductor electrically couples commutator 280 to the distal end of the shaft, thereby permitting a cauterizing action at the distal end of the shaft.

Paragraph beginning at page 7, line 25 has been amended as follows:

FIGS. 3A-D are enlarged cross-sectional views of interconnector 112. In FIGS. 3A-D, an embodiment of the invention is shown in which surgical tool 102 and the interconnector are removable from housing 108. FIGS. 3A-B show cross-sectional views of the surgical apparatus shown in FIG. 1A. In the cross section views shown in [FIG.] <u>FIGS.</u> 3A-B, the electrical interface is integrated into the housing, rather than being located within the interconnector. <u>FIGS.</u> 3A-B[.] show an electrical interface between the tool and power supply, located in the housing. FIGS. 3C-D are cross-sectional views of the apparatus shown in <u>FIG.</u> 1B, in which the electrical interface is integrated into the interconnector, rather than being located within the [interconnector] <u>housing</u>. <u>FIGS.</u> 3C-D show an electrical interface, between the surgical tool and power supply, located in the interconnector.

Paragraph beginning at page 8, line 15 has been amended as follows:

Shaft 140 is contained within cannula 114, and kept separate from the cannula by inner alignment piece 230. Distal O-ring seal 332 is located within a retaining groove ata distal end of shaft 140, and is in contact with the interior of the inner alignment piece. The cannula, inner alignment piece[ ], and shaft are connected at their proximal ends to housing 108 via interconnector 112. The inner alignment piece locates inner [o-ring] O-ring 320 between the inner alignment piece and the shaft near the proximal end of the inner alignment piece and the shaft. Interconnector 112 serves to locate the shaft, inner alignment piece, and cannula. Interconnector 112 includes locking member 216 which is shaped so as to secure the cannula within extended housing portions 208. The locking member also has a notch 212, which is located opposite detent 210 located on an interior surface of the extended housing portion. The locking member additionally includes outer [o-ring] O-ring seal 206, located between the locking member exterior surface and the extended housing portion interior surface. The extended housing portion includes exterior threads 214A, located so as to be opposite interior threads 214B, which are located on locking ring 218. Located at a proximal end of shaft 140 are commutator 134 and drive coupling 130. RF signal source 304 is electrically coupled via wire 122 which is coupled in turn with electrical contact 118, via push switch 116. The electrical contact is located such that it is in removable contact with commutator 134. Push switch 116, which is spring biased by spring 120, is located on an exterior surface of the housing.

The paragraph beginning at page 9, line 7, is being rewritten as the following two rewritten paragraphs. For the Examiner's information, the only change being made to the original paragraph is that it is being divided into two paragraphs (i.e., there are no changes to the wording):

In operation, interconnector 112 seves to attach inner alignment piece 230, shaft 140 and cannula 114 to the housing. The inner alignment piece serves to locate the shaft within the cannula, and also serves as a bearing for the shaft. Locking member 216 serves to locate the inner alignment piece within extended housing portion 208 through the engagement of notch 212 on the locking member and detent 210 on the interior of the extended housing portion. Locking ring 218 serves to secure the locking member, and thus the whole of surgical tool 102, within the

extended housing portion. The locking ring accomplishes this via the cooperative action of its interior threads 214B and exterior threads 214A, which are located on the exterior surface of the extended housing portion. Drive coupling 130 serves to impart a surgical motion to shaft 140. Distal O-ring seal 332, outer O-ring seal 206 and inner O-ring seal 320 serve to prevent transmission of body fluids that may be present at the distal end of the shaft through to the housing. RF signal source 304 serves to provide power via wire 122, and electrical contact 118 to commutator 134. Commutator 134 is electrically coupled to distal end of shaft 140, thus producing a cauterizing effect at the distal end of the shaft. The electrical circuit is closed when push switch 116 is depressed against spring 120 to bring electrical contact 118 into electrical contact with commutator 134.

FIG. 3B shows a cross section of another embodiment of surgical apparatus 300, which shows a generally insulating shaft including an interior conductor 240. The elements, their arrangement and function are identical to those described above in FIG. 3A with the following differences. The interior conductor is located within shaft 140, and electrically couples commutator 134 to the distal end of the shaft, thereby permitting a cauterizing action at the distal end of the shaft.

The paragraph beginning at page 16, line 11, as added by Preliminary Amendment, is being rewritten as the following:

It can be appreciated that the structures depicted in Figs. 6A-6D include convex and concave tip surfaces. The [coating] <u>cutting</u> edges can be defined by the meeting of these convex and concave tip surfaces.